# JVC

FIXED IR DOME CAMERA TK-T2101RU
FIXED IR DOME CAMERA TK-T2101RE

Instructions
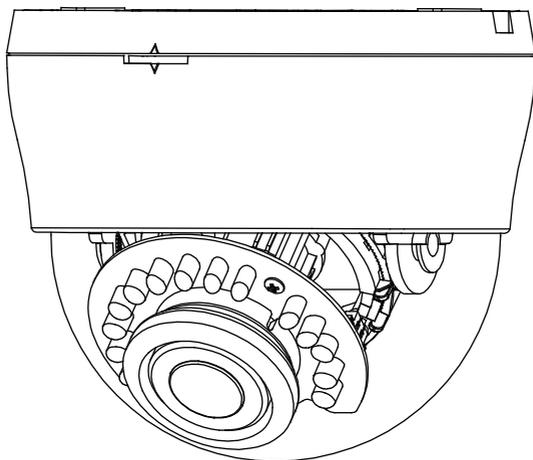
Important Safety Information

Warning and Operating Notes

Installation and serving the camera should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.

WARNING!   **The use of CSA certified/ UL Listed Class 2 power adapters are required to ensure compliance.**

Note:

This product is intended to be supplied by a Listed Direct Plug-In Power Unit marked "Class 2" or Listed Adapter marked "L.P.S." (or "Limited Power Source") and rated output DC 12V, 0.415A minimum or AC 24V, 60Hz, 0.415A minimum. (for USA)

WARNING!   **To reduce the risk of fire or electric shock, do not expose the product to rain or moisture.**

Caution   **Connect only one camera to the power line, AC24V/DC12V. Do not share the power line with other equipment. The power cable between power source and the camera must be under 3 m.**

Operating Notes

Power Supply: This dome camera can operate on AC 24V or DC 12V.

Note   **Connectors and field wiring terminals for external Class 2 circuits provided with marking indicating minimum Class of wiring to be used. Class 2 shall be marked adjacent to the field wiring terminals.**

Operating Conditions

- Avoid viewing very bright objects (example, light fixtures) for extended periods.
- Avoid operating or storing the unit in the following locations:
  - Extremely humid, dusty, hot, cold environments (where the operating temperature is outside the recommended range of 14°F to 122°F [-10°C to +50°C].)
  - Close to sources of powerful radio or TV transmitters
  - Close to fluorescent lamps or objects reflecting light
  - Under unstable light sources (may cause flickering)

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# INTRODUCTION

1. Introduction

The dome camera is ideal for indoor installation in commercial and residential environment. With 3-axis mount support, it provides flexible installation on a ceiling or wall even at an angle.

1.1 Before You Begin

Please read this manual carefully before you install the dome camera. Keep this guide for future reference.

1.2 Dimensions

84mm

112mm

97mm
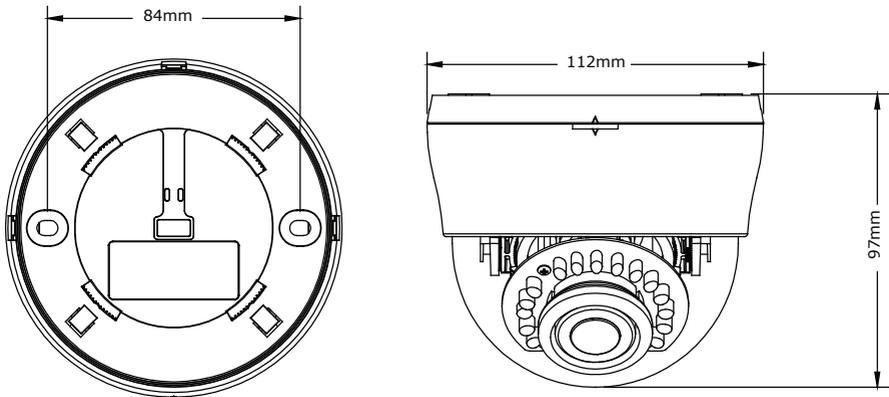
INTRODUCTION

1.3 Names of Camera Parts
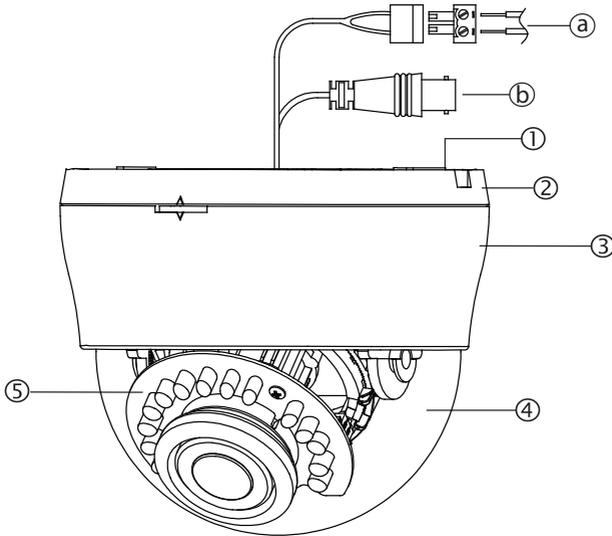
Figure 1-1 Camera parts

1. Conduit hole used for surface run power/video connector
2. Bottom case
3. Camera housing
4. Dome cover
5. IR board
a. AC 24V / DC 12V power input connector (red +, black -)
b. Video output connector

Note: See Figure 2-3 for camera board controls.

1.4 Routine Maintenance
- The dome cover is an optical part. Use a soft, dry cloth to remove any fingerprints or dust.
- Clean the camera housing with a soft, dry cloth. For more stubborn stains, use a cloth dampened with a small quantity of neutral detergent, then wipe dry.

Caution: Do not use volatile solvents such as alcohol, benzene or thinners to avoid damaging the surface finish.

INSTALLATION

2. Installation

2.1 Disassembling the Camera

Before you mount and adjust the camera, follow these steps to disassemble the camera.

1. Insert a coin or flat tool to the side hole and twist to remove the dome cover.

2. Remove the dome cover (#2).

1. Bottom case
2. Dome cover
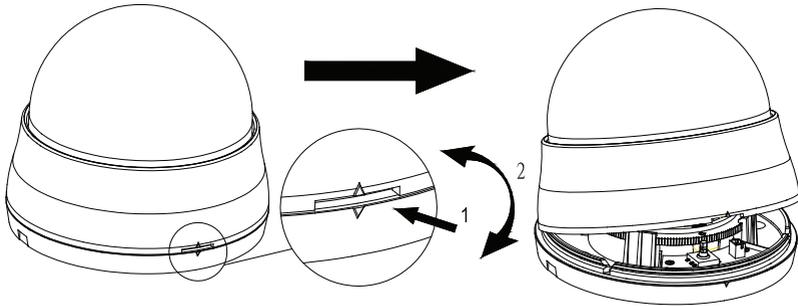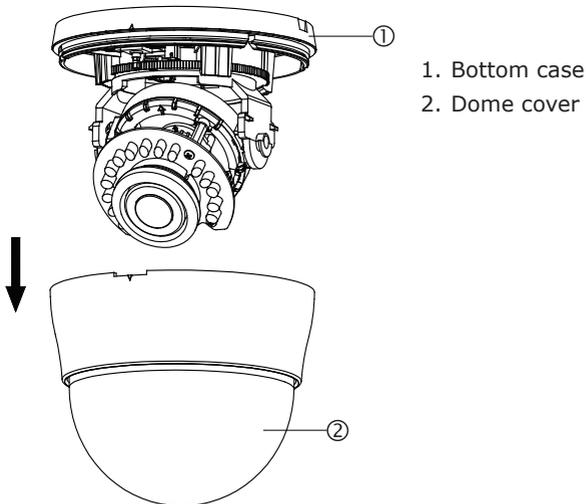
Figure 2-1 Disassemble the camera

INSTALLATION

2.2 Connecting the wiring

Refer to Figure 1-1 to connect the video connect output connector (#b) and 24 VAC/12 VDC power connector (#a).

Caution: For DC power supply use, make sure the polarity is correct to avoid malfunction and / or camera damage.

2.3 Mounting the Camera

1. Attach the mounting template to the wall or ceiling.
2. Drill two holes, then insert the screw anchors (#1) into the holes.
3. Secure the bottom case to the wall or ceiling with the TP4 x 15 mm tapping screws supplied (#2).
4. To prevent the camera from falling off, ensures it is connected to a firm place (ceiling slab or channel) using a Safety Wire (fall prevention wire#3 is not supplied).

Note: Depending on the material of your mounting surface, you may require different screws and anchors than those supplied.

Safety Wire (fall prevention wire#3 is not supplied).

Please tighten a safety wire using plastic band on a firm place as photo.

Safety Wire

Plastic Band

1. Screw anchors (x2), supplied
2. TP4 x 15 tapping screws (x2), supplied
3. Safety Wire(fall prevention wire, not supplied)
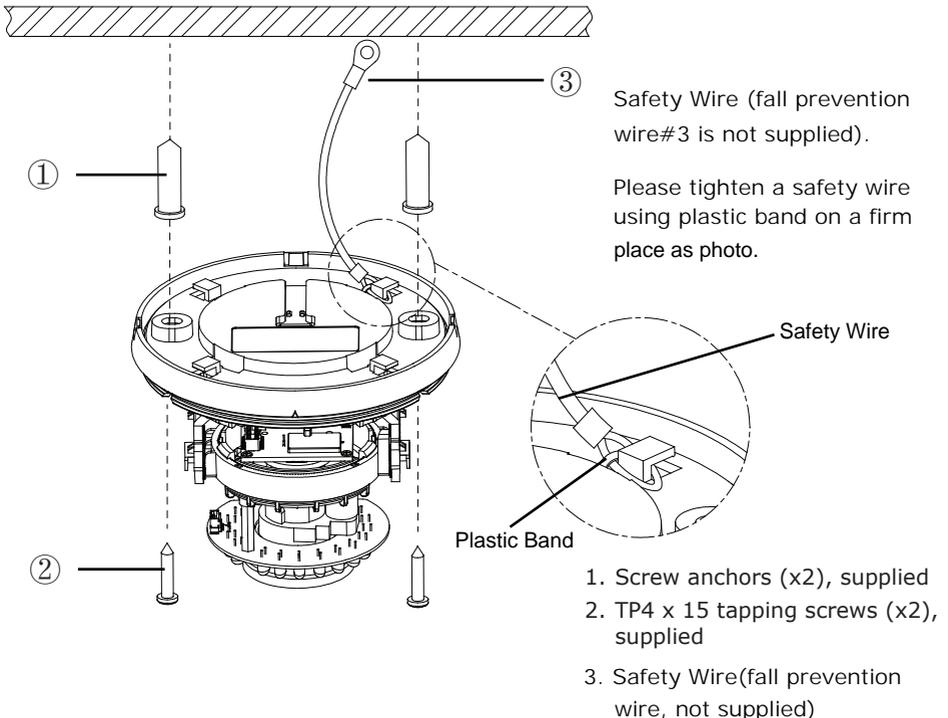
Figure 2-2 Camera installation

INSTALLATION

2.4 Optional Camera Settings

Refer to Figure 2-3 to locate the OSD joystick control on the camera board. Use the joystick to access the OSD menu and configure the camera settings as required.

To use the OSD joystick control:

- Press the OSD joystick control straight down to enter the Main menu or a selected item.
- Move the OSD joystick control UP, DOWN, LEFT and RIGHT to navigate through menus and options.

For further information on OSD settings, refer to the "3. OSD Settings" section.

1. Monitor out
2. OSD Joystick Control
3. Camera mounting holes
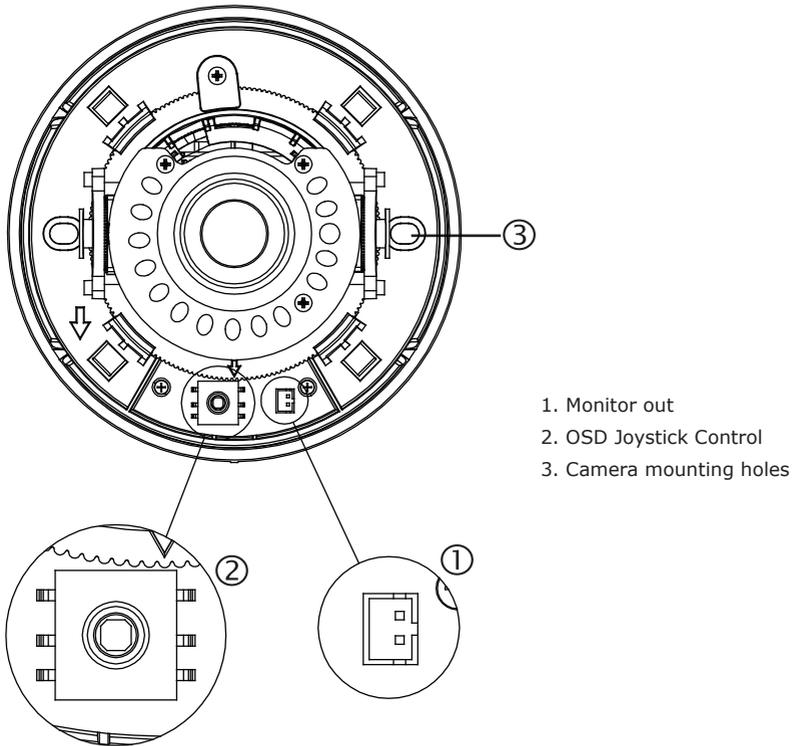
Figure 2-3 Camera adjustment controls

INSTALLATION

2.5 Adjusting the Camera Position

The dome camera has three axes for positioning the camera. While monitoring the picture on the monitor, adjust the camera position as follows:

**Horizontal Adjustment** Rotate 3D assembly in the base. Do not turn assembly more than 360° as this may cause the internal cables to twist and disconnect or break. Before making horizontal adjustment, please adjust vertical adjustment to 90 degree (vertical) first.

Vertical Adjustment After loosening the screw on the bracket, position the camera as desired, then tighten the screw back to the bracket.

Horizontal Rotation For wall mount and tilted ceilings, rotate the lens base (maximum 360°) until you are satisfied with the field of view.

1. Rotate 3D assembly in base for horizontal adjustment
2. Tilt adjustment bracket and screw for vertical adjustment
3. Axis ring for horizontal rotation for wall mount and tilted ceilings
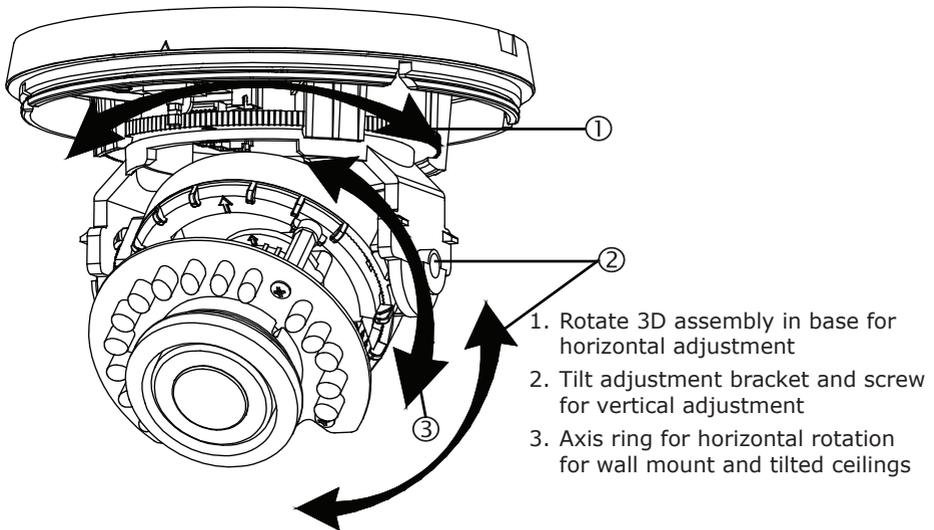
Figure 2-4 Camera adjustment

2.6 Adjusting the Lens

1. Loosen the focus lever counter-clockwise a little, then adjust the focus for optimum picture sharpness.
2. Loosen the zoom lever counter-clockwise a little, then rotate the zoom lever and determine the image view.
3. Re-tighten the zoom lever and focus lever after adjustment.

Note: It is important that you lock the zoom and focus levers after making adjustments. This will avoid the positions moving (for example, from temperature changes or vibrations).

INSTALLATION

2.7 Completing the Installation

Once all adjustments are done, attach and secure the camera housing:

1. Use a soft, lint-free cloth to wipe the dome cover clean and remove fingerprints.
2. Assemble the dome cover (#2) and the bottom case (#1).
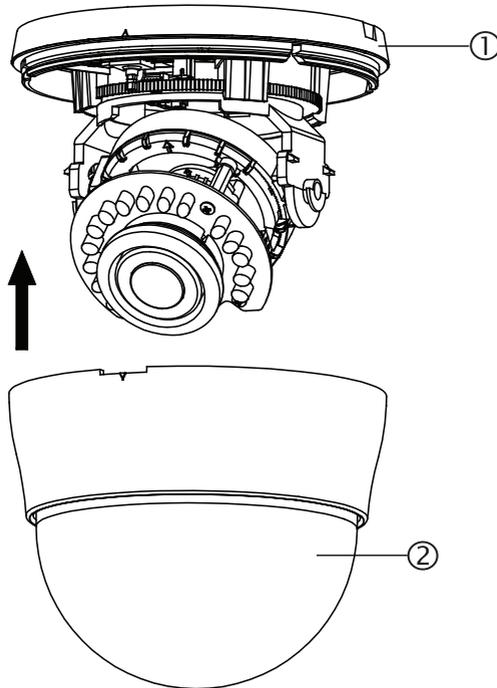
Figure 2-5 Completing the installation

OSD SETTINGS

3. OSD Settings

Use the OSD menu to set up the camera for optimum performance.

```
LENS            AUTO        PRIVACY         OFF
SHUTTER/AGC     AUTO        DAY/NIGHT       AUTO
WHITE BAL       ATW         NR
BACKLIGHT       OFF         CAMERA ID       OFF
PICT ADJUST                 SYNC            INT
ATR             OFF         LANGUAGE        ENGLISH
MOTION DET      OFF         CAMERA RESET
NEXT                        BACK
EXIT            SAVE ALL    EXIT            SAVE ALL
```

Figure 3-1 OSD Main Menu

3.1 Lens

The LENS settings allows you to configure Lens and brightness. Options are AUTO (Auto Iris lens) and MANUAL. The default setting is AUTO.

In the AUTO submenu, you can set the MODE as OPEN, CLOSE or AUTO. Then select SPEED to adjust the DC Iris Lens convergence speed.

```
TYPE            DC
MODE            OPEN
SPEED           046
```

3.2 SHUTTER/AGC

You can set the SHUTTER/AGC as AUTO or MANUAL. The default setting is AUTO.

When LENS is set to AUTO: It is recommended to set SHUTTER/AGC to AUTO mode. In the AUTO submenu, adjust HIGH LUMINANCE MODE mode according to your application:

- **AUTO IRIS mode:** Use this for normal condition application environments. The IRIS level will be controlled by camera brightness.
- **SHUT+AUTO IRIS mode:** Use this for high light application environments. The exposure will be controlled by AES or the DC Iris. The iris level will be controlled by camera brightness.

```
HIGH LUMINANCE
MODE            AUTO IRIS
BRIGHTNESS      024

LOW LUMINANCE
MODE            AGC
BRIGHTNESS      x0.25
```

OSD SETTINGS

If SHUTTER/AGC is set to MANUAL, the submenu is shown as below. The shutter speed is a variable from 1/50(1/60)sec to 1/10000sec and the AGC is selectable depending on your environment condition.

MODE	SHUT+AGC
SHUTTER	1/50(1/60)
AGC	6.0

Recommended settings according to the application:

1. Auto Exposure by Iris Control:
- Application: General Purpose, Indoor surveillance. This is default settings.
- LENS: AUTO
- SHUTTER/AGC: AUTO
- HIGH LUMINANCE MODE: AUTO IRIS

2. Auto Exposure by AES first, then by IRIS Control:
- Application: Outdoor, Traffic surveillance
- LENS: AUTO
- SHUTTER/AGC: AUTO
- HIGH LUMINANCE MODE: SHUT AUTO IRIS

3. Auto Exposure by Iris Control with fixed Shutter Speed:
- LENS: AUTO
- SHUTTER/AGC: MANUAL
- SHUTTER 1/50 (1/60) ~ 10000

  After this, the following are set
- SHUTTER/AGC: AUTO
- HIGH LUMINANCE MODE: SHUT+AUTOIRIS

3.3 WHITE BAL

WHITE BALANCE controls color on the screen. Options include ATW (Auto White Balance), PUSH, PUSH LOCK, USER1, USER2, ANTI CR (Anti Color Rolling Suppression) and MANUAL. The default is ATW.

- **ATW:** Select ATW when the scene illumination varies between indoor scenes and outdoor scene lighting.

SPEED	171
DELAY CNT	152
ATW FRAME	X0.50
ENVIRONMENT	INDOOR

- **MANUAL:** You can manually adjust the LEVEL from 15 to 69.
- **USER1/USER2:** You can adjust blue setting (B-GAIN) and red setting (R-GAIN) value from 0 to 255.

OSD SETTINGS

- **PUSH:** When selected in the appropriate position, the whole area will perform white balance.
- **PUSH LOCK:** When selected in the appropriate position, WHITE BALANCE will perform once.

3.4 BACKLIGHT

Set Backlight compensation function. It controls the light level to overcome sever backlight conditions. Available options include OFF, BLC or HLC (Highlight Compensation) mode. The default is OFF.

If HLC is selected, HLC is activated automatically when the camera detects high-luminance.

3.5 PICT ADJUST

PICTURE ADJUST allows you to adjust picture settings for optimal image. In the PICT ADJUST submenu, you can adjust BRIGHTNESS, CONTRAST, SHARPNESS, HUE and GAIN value. In addition, you can set MIRROR to ON to reflect the image.

MIRROR	OFF
BRIGHTNESS	000
CONTRAST	128
SHARPNESS	128
HUE	128
GAIN	128

3.6 ATR*

Set ATR (Adaptive Tone-curve Reproduction) function. You can select ON or OFF. The default is OFF. If selecting ON, you will enter the ATR submenu, where you can set LUMINACE and CONTRAST to optimize by image.

LUMINANCE	LOW
CONTRAST	LOW

*Also known as Wide Dynamic Range. This function expands the video dynamic range of the camera and improves visibility of images even in high contrast environments.

3.7 MOTION DET

MOTION DET allows to detect moving objects on the screen. The default is OFF. If selecting ON, you will enter the MOTION DET submenu. You can set up to 4 motion areas to detect moving objectives and adjust the motion detection sensitivity from 0 to 127.

3.8 PRIVACY

PRIVACY function mask up to 8 privacy areas on the screen from video monitoring. The default setting is OFF. If selecting ON, you will enter the PRIVACY submenu. You can configure up to 8 privacy areas and set color and transparency of the privacy zones. In addition, you can enable MOSAIC function for the privacy zone.

OSD SETTINGS

Note: If you enable MOTION DET function, then PRIVACY function will support 4 zones only.

REA SEL	1/8
TOP	000
BOTTOM	000
LEFT	000
RIGHT	000
COLOR	1
TRANSP	0.00
MOSAIC	OFF

3.9 DAY/NIGHT

The camera will automatically switch to B/W mode when the illumination is under a certain threshold. There is no need to adjust this setting.

Under B/W mode, you can set BURST to be ON or OFF.

3.10 NR

NR allows you to configure the DNR (Digital Noise Reduction) settings to reduce noise on the screen. In the NR submenu, you can enable the NR MODE to the Y (BRIGHT) / C (COLOR), C LEVEL or Y LEVEL mode. According to your NR mode, you can adjust Y LEVEL or C LEVEL as required.

NR MODE	Y/C
Y LEVEL	000
C LEVEL	000

Note: When the Y/C Level is higher, the noise in dark areas become lessened. Also, resolution will become lower. When it is lower, there are more noise in dark areas.

3.11 CAMERA ID

CAMERA ID allow you to specify camera ID. Options are OFF (default) and ON. In the ON submenu, you can add a camera title up to 26 characters with 2 lines and also select where the title appears on the monitor screen.

3.12 LANGUAGE

OSD supports 8 multiple languages. Options include ENGLISH (default), JAPANESE, GERMAN, FRENCH, RUSSIAN, PORTUGUESE, SPANISH and SIMPLIFIED CHINESE.

3.13 CAMERA RESET

To restore factory defaults, select CAMERA RESET and then press the joystick control.

3.14 SAVE ALL

SAVE ALL item allows you to save all settings and exit the OSD menu.

SPECIFICATIONS

Signal System	NTSC	PAL
Image System		
Image Pickup Device	1/3 type: IT CCD	
Effective Pixels (HxV)	976 (H) × 494 (V)	976 (H) × 582 (V)
Electric		
Scanning System	2:1 Interlace V: 59.94 Hz , H: 15.734KHz	2:1 Interlace V: 50 Hz , H: 15.625 KHz
Sync System	Internal	
Horizontal Resolution	600 TV lines	
Bulit-in Lens	f=2.8mm~10.5mm,F1.2 DC iris varifocal	
View Angle	Horizontal:101.8°(wide)~27.4°(tele) Vertical:73.7°(wide)~20.6°(tele)	
IR Distance	15 m	
IR Wave length	850nm	
Minimum Illumination	IR LED ON 0 lx (Color/B&W switch point 20lx typ.)	
S/N Ratio	50dB typ. (AGC off)	
Electric shutter	1/60 sec	1/50 sec
Video Output	1Vpp composite output, 75 Ω	
Power Supply		
Power Requirement	DC 12V & AC 24V (50Hz/60Hz) ± 10%	
Power Consumption	DC12V 415mA	
Environment		
Operating Temperature	-10°C ~ 50°C	
Operating Humidity	90% MAX	
Storage Temperature	-20°C ~ 60°C	
Storage Humidity	90% MAX	
Mechanism		
Dimension(ΦxH)	Φ112mmx97mm (4.41"x 3.82")	
Weight	300g approx.	
Accessories	FIXED IR DOME CAMERA ×1 INSTRUCTIONS ×1 SAFETY PRECAUTIONS ×1 WARRANTY CARD ×1 TEMPLATE ×1 SCREW ×2 SCREW ANCHOR ×2 MONITOR CABLE ×1	FIXED IR DOME CAMERA ×1 INSTRUCTIONS ×1 SAFETY PRECAUTIONS ×1 TEMPLATE ×1 SCREW ×2 SCREW ANCHOR ×2 MONITOR CABLE ×1

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